

OC-192 SR-2 Transmitter Module

FEATURES

- ## DESCRIPTION

The TRM7043 is an external modulator integrated DFB laser transmitter module for OC-192 SR-2 applications.

The diagram illustrates the control system for an EM Laser. It features several input and output ports and internal control blocks:

- Inputs:** Signal Input (DATA), Shut-down Signal Input.
- Core Components:** 10Gbit/s EM Driver IC, EM Laser, Automatic Temperature Control, Automatic Power Control, Output Swing Voltage Control.
- Interfaces and Outputs:** Temperature Monitor Interface (Laser Temperature Monitor Output), Laser Forward Current Monitor Interface (Laser Forward Current Monitor Output), Laser Forward Current Alarm Interface (Laser Forward Current Alarm Output), Optical Low Power Alarm Interface (Optical Low Power Alarm Output).
- Connections:** The 10Gbit/s EM Driver IC receives DATA signals and controls the EM Laser. The EM Laser is controlled by the Automatic Temperature Control and Automatic Power Control blocks. The EM Laser outputs an Optical Output signal. The Automatic Power Control block also controls the Output Swing Voltage Control block.

PERFORMANCE SPECIFICATIONS**Optical Characteristics (Tc = 0 to 65°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions(Note)
Average Output Power	Po	-4.0		0	dBm	Point S
Peak Wavelength	λ_p	1,530	-	1,560	nm	
Extinction Ratio	ER	8.2	-	-	dB	
Side-mode Suppression Ratio	Sr	30	33	-	dB	
Optical Waveform	-	TBD			-	
Optical Path Penalty	Pd		-	2.0	dB	Dispersion=+400ps/nm BER=10 ⁻¹²

Note; Unless otherwise specified, 9.95328Gbit/s NRZ data rate, 50% mark density, PRBS = 2³¹-1, VEE1 = -7.35V±5%, VEE2 = -5.2V±5%, VCC = +5.0V±5%, VEE3 = -2.0V±5%

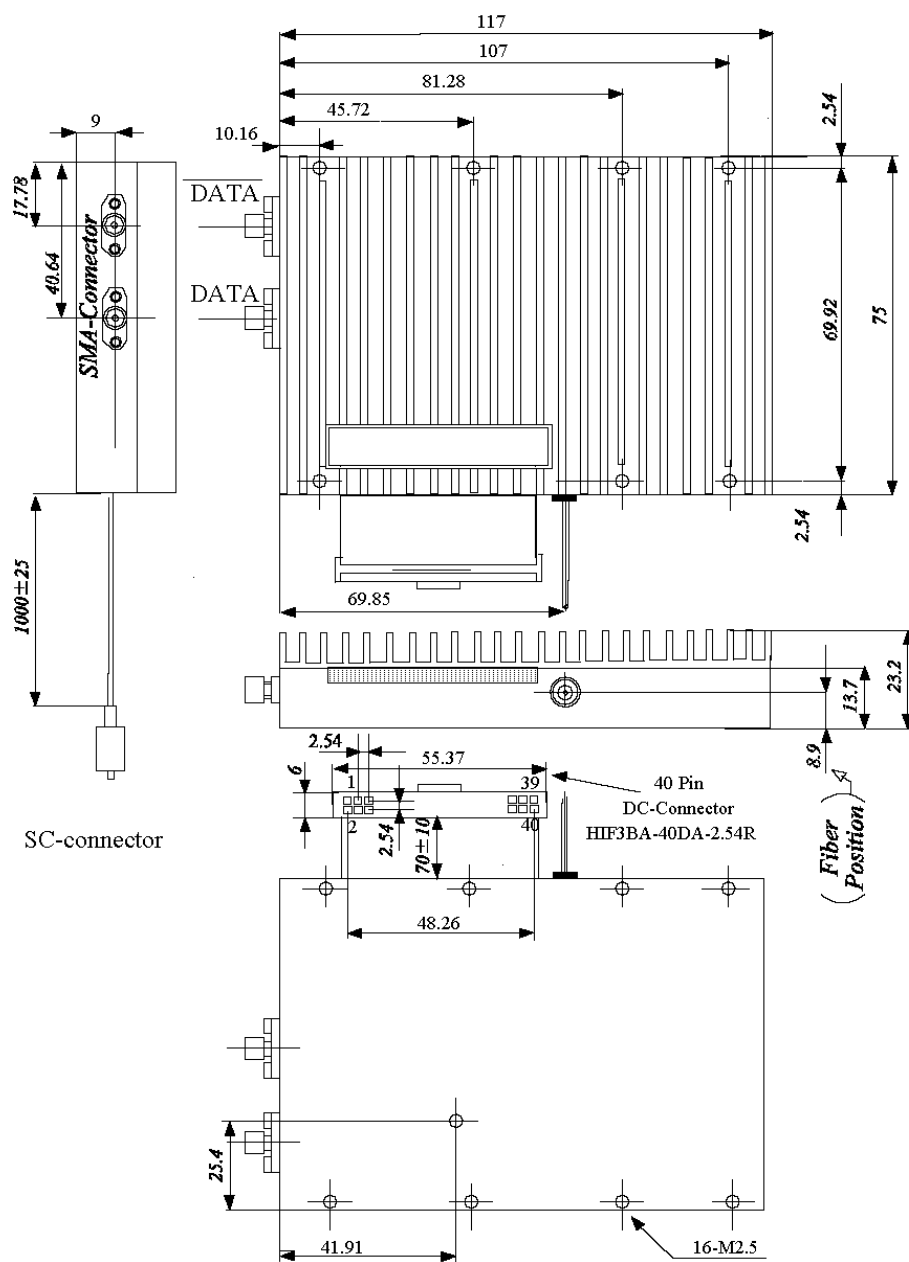
Electrical Characteristics (Tc = 0 to 65°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions(Note)
Data Input Voltage	Vin	400	-	1,000	mVpp	
DC Power Supply Voltage	VCC	4.75	5.00	5.25	V	
	VEE1	-7.72	-7.35	-6.98	V	
	VEE2	-5.45	-5.20	-4.95	V	
	VEE3	-2.10	-2.00	-1.90	V	
DC Power Supply Current	ICC	-	-	800	mA	
	IEE1	-	-	640	mA	
	IEE2	-	-	600	mA	
	IEE3	-	-	1,300	mA	
Power Consumption	Pc	-	4.0	10.0	W	
Low Power Alarm - Low	Vopt(L)	-	-	0.5	V	Normal
Low Power Alarm - High	Vopt(H)	4.2	-	-	V	3dB down
Laser Enable Input	VSD(L)	-	-	1.0	V	
Laser Disable Input	VSD(H)	3.5	-	-	V	
Laser Forward Current Alarm – Low	VLFC(L)	-	-	0.5	V	Normal
Laser Forward Current Alarm – High	VLFC(H)	4.2	-	-	V	50% increase

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Package Dimensions

Dimension: mm



Pin Configuration

DC Connector

Pin	Description	Pin	Description
1	Shut-down Signal Input	21	VEE1 = -7.35V
2	Ground	22	VEE1 = -7.35V
3	Ground	23	VEE2 = -5.2V
4	Ground	24	VEE2 = -5.2V
5	Optical Low Power Alarm Output	25	VEE2 = -5.2V
6	Ground	26	VEE2 = -5.2V
7	Laser Forward Current Alarm Output	27	Ground
8	Ground	28	Ground
9	Laser Forward Current Monitor Output	29	Ground
10	Ground	30	Ground
11	Temperature Monitor Output (+)	31	VEE3 = -2.0V
12	Temperature Monitor Output (-)	32	VEE3 = -2.0V
13	Ground	33	VEE3 = -2.0V
14	Ground	34	VEE3 = -2.0V
15	Ground	35	Ground
16	VCC = +5.0V	36	Ground
17	VCC = +5.0V	37	Ground
18	VCC = +5.0V	38	Ground
19	VEE1 = -7.35V	39	Ground
20	VEE1 = -7.35V	40	Ground
Metal case should be grounded.			